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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/815,530	04/01/2004	B. Ryland Wiggs	N1189	1575

7590 12/07/2005

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EXAMINER

ALI, MOHAMMAD M

ART UNIT

PAPER NUMBER

3744

DATE MAILED: 12/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

TLK

<b>Office Action Summary</b>	<b>Application No.</b>		<b>Applicant(s)</b>	
	10/815,530		WIGGS, B. RYLAND	
	<b>Examiner</b>		<b>Art Unit</b>	
	Mohammad Ali		3744	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 25 October 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-42 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 16-18 and 34-36 is/are allowed.
- 6) ☒ Claim(s) 1-15, 19-33 and 37-42 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 5-7, 10-11, 19-20, 23-25, 28-29 are rejected under 35 U.S.C. 102(b) as being anticipated by Ikeda et al., (5,598,887). Ikeda et al., disclose a heat pump system including dehumidification comprising a refrigerant, refrigerant transport tubing 20-25, a compressor 1, interior heat exchange means 4, 5, and exterior heat exchange means 3, comprising providing a first interior heat exchange 4 to withdraw heat from the interior air, situated between the system's exterior heat exchange means 3 and the system's compressor's refrigerant gas/vapor intake point, and providing a second interior air heat exchange means 5 to reject heat into the interior air, situated between the system's compressor's refrigerant gas/vapor discharge point and the system's exterior heat exchange means 3. The main cooling circuit is provided with ON-OFF valves 15-17 and an expansion valve 6 and the circuit combining the interior heat exchange means 5 is provided with check valves 11-13 and an ON-OFF valve 14. See Fig. 1.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 13-15 and 31-33 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Ikeda et al. Ikeda et al., disclose the invention substantially including both the air handler F. Examiner considers the air handler F for first interior heat exchange means 4 and the second interior heat exchange means 5. Alternatively, choosing a separate air handler for each interior heat exchange means is an obvious choice one individual skilled in the art since there is no criticality or unexpected result from it.

Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ikeda et al. Ikeda et al., discloses the invention substantially as claimed as stated above. However, Ikeda et al., do not disclose a disengaged position of a solenoid or a check valve of the second interior heat exchange means but Ikeda et al., disclose removed valve position with pipe 25 of the second interior heat exchange means 5 circuit during a cooling mode. See Fig. 5. It indicates that it would be obvious to one skilled individual to stop 12-12 or 14 in Fig. 1 to disengage the second heat exchange means 5 during the cooling mode.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.

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2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 4, 8-9, 12, 22, 26-27, 30, 37 and 38-42 rejected under 35 U.S.C. 103(a) as being unpatentable over Ikeda et al., in view of Haas et al., (4,182,133). Ikeda et al., disclose the invention substantially as claimed as stated above. However, Ikeda et al., do not disclose controlling of solenoid valve or check valve by the thermostat or humidistat. Haas et al., teach the use of humidistat 48 and thermostat 54 for controlling solenoid coil 42 of a solenoid valve 26 in a heat pump system for the purpose of controlling refrigerant flow. Haas et al., also teach while controlling solenoid valve by humidistat 48, the heat pump system still operated on cooling mode See Fig. 1 –2 and column 3, line 28 to column 5 line 34. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the Heat pump system of Ikeda et al., in view of Haas et al., such that humidistat control solenoid valve could be provided in order to control the refrigerant flow.

### ***Allowable Subject Matter***

Claims 16-18 and 34-36 are allowed over.

### ***Response to Arguments***

Applicant's arguments filed 10/25/05 have been fully considered but they are not persuasive. The applicant argued, "Applicant herein respectfully disagrees, in that Ikeda's is directed at the automotive industry, have nothing to do with direct exchange/expansion technology, have expansion valves in differing locations than the

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subject invention, and utilize no exterior heat exchange means when operating in both a cooling and a heating mode, Therefore, the invention of Ikeda would neither be obvious to those in the direct exchange/expansion field, nor would adequately function for the purposes of the subject invention.” The Examiner disagrees. Nowhere in the claims it is mentioned that the system is a direct exchange/expansion system. On the other hand claim 10 mentions that “the heat pump system is comprised of at least one of a direct expansion heat pump system, a water source heat pump system, and an air source heat pump system. Ikeda et al’s heat pump system is of air source heat pump system. Even, if it is a direct expansion heat pump system, the Examiner finds no problem to read the claimed invention by other category of heat pump systems because they all belong to refrigeration system. Therefore, the rejections are proper. However, the rejections have been made as a second non-final for further ground of rejections for some additional claims, which were objected first.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mohammad Ali whose telephone number is (571) 272-4806. The examiner can normally be reached on Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner’s supervisor, Melba Bumgarner can be reached on (571) 272-4709. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Mohammad M. Ali  
December 4, 2005